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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
DONG, DALEI

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/904,269	MATTHIES, DENNIS L.	
	Examiner	Art Unit	
	Dalei Dong	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 10-14, 16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,488,266 to Aoki in view of U.S. Patent No. 4,626,303 to Ogura.

Regarding to claims 1-2, 6-8, 10-14, 16, and 18-19 Aoki discloses in Figure 1, "the electro-luminescence device of the present invention is composed of transparent substrate 1 (sheet) such as a transparent plastic substrate, a glass substrate, etc., having successively laminated thereon transparent electrode 2, luminous layer 3, dielectric layer 4, and back electrode 5, with back protective material 6 (second sheet) being adhered to back electrode 5 through adhesive resin film 7" (column 3, line 46-53).

Aoki also discloses "The adhesive resin film is inserted between the electro-luminescence layer on the transparent substrate and the back protective material and they are heated to, e.g., 140.degree. C. in a vacuum laminator (vacuum chuck) to soften or melt the adhesive resin film. Then, when the pressure is reduced, degassing occurs between the transparent substrate and the back protective material to adhere both the

members to each other. Thereafter, when the assembly is pressed, a further sure or firm adhesion is obtained" (column 5, line 11-20).

Aoki further discloses "at the adhesion, (1) a laminate of the transparent substrate and the electro-luminescence layer, (2) the adhesive resin film, and (3) the back protective material can be laminated in succession, or the adhesive resin film (2) is previously adhered to the back protective material (3) and the adhered members can be laminated on the laminate (1)" (column 5, line 21-26).

However, Aoki does not disclose temporarily flattening a sheet. Ogura teaches in Figure 2, a press for the pressure sealing of a display element comprising "(1) a stage 24 comprising a supporting plate 21 made of a metal such as stainless steel or aluminum, a heater 22 supported thereby, and a cushioning material 23 such as a sponge covering the heater 22 and (2) a pressing means 28 comprising a pressuring plate 25 made of a metal such as stainless steel or aluminum, a heater 26 supported thereby, and a cushioning material 27 such as sponge covering the heater 26. When the filling hole (not shown in the figure) of a liquid crystal cell 20 is sealed, a pressure P is exerted to the pressing means 28 and the filling hole can be sealed with a sealant 29" (column 4, line 28-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the press of Ogura to temporarily flattening the substrate or sheet and the protective material or second sheet of Aoki in order to ensure good contacts between each layers and form a hermetical seal and avoid the absorption of impurities between surface between layers; therefore the performance can be enhanced

by reduce the drive voltage can be reduced and eliminate the development and growth of dark spots.

Regarding to claim 3, Aoki discloses "As the transparent electrode for the electro-luminescence device of the present invention, for example, an electrically conductive film of tin oxide called an NESA film and a transparent electrode composed of a composite oxide of indium oxide and tin oxide, which is called an ITO film, can be used. Such a transparent electrode is formed as a thin film or layer on the surface of the transparent substrate by a vacuum vapor deposition method, a sputtering method, or a method of coating a salt of a corresponding metal on the transparent substrate and calcining it in an oxidative atmosphere" (column 4, line 7-17).

Aoki also discloses "the back electrode for the electro-luminescence device of the present invention is formed by coating an electrically conductive paste obtained by dispersing fine particles of silver, copper, nickel, carbon, etc., in, for example, an epoxy resin, a urethane resin, an acrylic resin, a polyester resin, etc., and caking to form the film by the same method as the case of forming the luminous layer or the dielectric layer as described above" (column 4, line 50-57).

Regarding to claims 4 and 5, Aoki discloses, "as the luminous layer for the electro-luminescence device of the present invention, any ordinary luminous layer may be used. For example, the luminous layer is formed by coating a dispersion formed by dispersing particles obtained by doping zinc sulfide with an element such as aluminum, copper, manganese, silver, chlorine, etc., as an activating agent in an organic high

dielectric material. Coating of the luminous layer is carried out by a screen printing method, a doctor blade coating method, a roll coater coating method, etc., and the coated luminous layer is heated on a hot plate, heated while vacuumizing, or heat-dried by a hot blast or far infrared rays to form the film thereof" (column 4, line 18-29).

3. Claims 9, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,488,266 to Aoki in view of U.S. Patent No. 4,626,303 to Ogura in further view of U.S. Patent No. 4,534,743 to D'Onofrio.

Regarding to claim 9, 15 and 17, Aoki discloses processing a sheet and securing the sheet to a second sheet while continuing to hold the sheet in a flattened configuration.

However, Aoki does not disclose temporarily flattening a sheet and securing the first and second sheets to an integrator plate. Ogura teaches a press to temporarily flattening a sheet, however fail to teach securing the first and second sheets to an integrator plate.

D'Onofrio teaches in Figure 10, "the carrier strip 20 of transparent insulating material, coated with transparent conductive coating 21, is fed through a series of steps and wound onto a take-up roll 22 in the same manner as before. However, in this case, the conductive material is removed from the initial conductive coating 21 to provide two contiguous laterally spaced electrode sections 21a, 21b with a narrow groove 23 between them. The conductive indium oxide may be continuously removed by an electric arc established between an electrode 24 and the grounded conductive coating. A power supply 25 supplies a potential of 60 volts DC, which effectively removes the conductive

coating, leaving a gap of approximately 0.127 millimeters" (column 4, line 65-68 to column 5, line 1-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the press of Ogura to temporarily flattening the substrate or sheet and the protective material or second sheet of Aoki and attach the carrier strip of D'Onofrio to the sheets of Aoki in order to ensure good contacts between each layers and form a hermetical seal and avoid the absorption of impurities between surface between layers; therefore the performance can be enhanced by reduce the drive voltage can be reduced and eliminate the development and growth of dark spots.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art are cited to further show the state of the art of a method of manufacturing a display device.

U.S. Patent No. 4,422,732 to Ditzik.

U.S. Patent No. 5,426,342 to Nakamura.

U.S. Patent No. 5,818,556 to Havens.

U.S. Patent No. 5,830,028 to Zovko.

U.S. Patent No. 6,113,450 to Narayanan.

U.S. Patent No. 6,126,505 to Narayanan.

U.S. Patent No. 6,280,559 to Terada.

U.S. Patent No. 6,312,304 to Duthaler.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.
April 16, 2003

Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800